

What is claimed is:

1 1. A method for recovering an organic solvent from a waste stream comprising
2 supercritical CO₂, an organic solvent and etching contaminants which comprises:

3 a) separating the supercritical CO₂ by subjecting the waste stream to elevated
4 temperature or reduced pressure or both, to thereby obtain a first composition containing the
5 supercritical CO₂ and a second stream containing the organic solvent and being at least
6 substantially free of the supercritical CO₂, and then

7 b) removing non-volatile etching contaminants from the second stream to
8 recover the organic solvent free of the etching contaminants.

2 2. The method of claim 1 which comprises removing the non-volatile etching
contaminants via evaporation

3 3. The method of claim 1 which comprises removing the non-volatile etching
contaminants by distillation.

4 4. The method of claim 1 which comprises removing the non-volatile etching
contaminants by filtration.

1 5. The method of claim 1 which comprises removing the non-volatile etching
2 contaminants by centrifugation.

1 6. The method of claim 1 which comprises removing the non-volatile etching
2 contaminants by settling.

1 7. The method of claim 1 wherein the organic solvent is selected from the
2 group consisting of propylene carbonate, homologs thereof, N-methyl pyrrolidone and
3 gamma butyrolactone.

1 8. The method of claim 1 wherein the organic solvent comprises propylene
2 carbonate or homolog thereof.

1 9. The method of claim 1 wherein the organic solvent comprises propylene
2 carbonates.

1 10. The method of claim 3 wherein the distillation comprises fractional
2 distillation.

1 11. The method of claim 3 wherein the distillation comprises sequential
2 evaporations.

1 12. A method for recovering an propylene carbonate from a waste stream
2 comprising supercritical CO₂, propylene carbonate and etching contaminants which
3 comprises:

4 a) separating the supercritical CO₂ by subjecting the waste stream to elevated
5 temperature or reduced pressure or both, to thereby obtain a first composition containing the
6 supercritical CO₂ and a second stream containing the propylene carbonate and being at least
7 substantially free of the supercritical CO₂, and then

8 b) removing non-volatile etching contaminants from the second stream to
9 recover the organic solvent free of said etching contaminants by at least one process selected
10 from the group consisting of evaporation, distillation, filtration, centrifugation and settling.

1 13. The method of claim 12 wherein the waste stream contains about 0.1 to
2 about 3 molar of the supercritical CO₂.

1 14. The method of claim 12 wherein the etching contaminants comprises at least
2 one member selected from the group consisting of silicon nitride, silicon dioxide, and
3 ammonium fluoride.

1 15. The method of claim 1 wherein the waste stream contains about 0.1 to about
2 3 molar of the supercritical CO₂.

1 16. The method of claim 1 wherein the etching contaminants comprises at least
2 one member selected from the group consisting of silicon nitride, silicon dioxide, and
3 ammonium fluoride.

1 17. A method for recovering propylene carbonate from a waste stream
2 comprising supercritical CO₂, propylene carbonate and etching contaminants which
3 comprises:

4 a) separating the supercritical CO₂ by subjecting the waste stream to elevated
5 temperature or reduced pressure or both, to thereby obtain a first composition containing the
6 supercritical CO₂ and a second stream containing propylene carbonate and being at least
7 substantially free of the supercritical CO₂, and then

8 b) removing non-volatile etching contaminants from the second stream by at
9 least one process selected from the group consisting of evaporation, distillation, filtration,
10 centrifugation to recover the said settling of the etching contaminants to recover the organic
11 solvent free of the etching contaminants

12 and wherein said temperature is about 20°C to about 150°C and said pressure is
13 about 16 to about 75 torr.

1 18. The method of claim 17 wherein the waste stream contains about 0.1 to
2 about 3 molar of the supercritical CO₂.

1 19. The method of claim 18 wherein the etching contaminants comprises at least
2 one member selected from the group consisting of silicon nitride, silicon dioxide, and
3 ammonium fluoride.

20. The method of claim 17 wherein the etching contaminants comprises at least one member selected from the group consisting of silicon nitride, silicon dioxide, and ammonium fluoride.

| Country | Year | Population (millions) | Urban population (millions) | Urban population (%) | Population density (per sq km) | Urban population density (per sq km) | Population growth rate (%) | Urban population growth rate (%) | Population growth rate (%) | Urban population growth rate (%) | Population growth rate (%) | Urban population growth rate (%) |
|---------|------|-----------------------|-----------------------------|----------------------|--------------------------------|--------------------------------------|----------------------------|----------------------------------|----------------------------|----------------------------------|----------------------------|----------------------------------|
| Algeria | 1980 | 12.5 | 4.5 | 36 | 100 | 100 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 1985 | 13.5 | 5.5 | 41 | 110 | 110 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 1990 | 14.5 | 6.5 | 45 | 120 | 120 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 1995 | 15.5 | 7.5 | 48 | 130 | 130 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2000 | 16.5 | 8.5 | 51 | 140 | 140 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2005 | 17.5 | 9.5 | 54 | 150 | 150 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2010 | 18.5 | 10.5 | 57 | 160 | 160 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2015 | 19.5 | 11.5 | 59 | 170 | 170 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2020 | 20.5 | 12.5 | 61 | 180 | 180 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2025 | 21.5 | 13.5 | 63 | 190 | 190 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2030 | 22.5 | 14.5 | 64 | 200 | 200 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2035 | 23.5 | 15.5 | 66 | 210 | 210 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2040 | 24.5 | 16.5 | 67 | 220 | 220 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2045 | 25.5 | 17.5 | 69 | 230 | 230 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2050 | 26.5 | 18.5 | 70 | 240 | 240 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2055 | 27.5 | 19.5 | 71 | 250 | 250 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2060 | 28.5 | 20.5 | 72 | 260 | 260 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2065 | 29.5 | 21.5 | 73 | 270 | 270 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2070 | 30.5 | 22.5 | 74 | 280 | 280 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2075 | 31.5 | 23.5 | 75 | 290 | 290 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2080 | 32.5 | 24.5 | 76 | 300 | 300 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2085 | 33.5 | 25.5 | 76 | 310 | 310 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2090 | 34.5 | 26.5 | 77 | 320 | 320 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2095 | 35.5 | 27.5 | 77 | 330 | 330 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2100 | 36.5 | 28.5 | 78 | 340 | 340 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2105 | 37.5 | 29.5 | 79 | 350 | 350 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2110 | 38.5 | 30.5 | 79 | 360 | 360 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2115 | 39.5 | 31.5 | 80 | 370 | 370 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2120 | 40.5 | 32.5 | 80 | 380 | 380 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2125 | 41.5 | 33.5 | 81 | 390 | 390 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2130 | 42.5 | 34.5 | 81 | 400 | 400 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Algeria | 2135 | 43.5 | 35.5 | | | | | | | | | |